Date: October 29, 2004 Label No. EV428579855US I hereby certify that, on the date indicated above, I deposited this paper with identified attachments and/or fee with the U.S. Postal Service and that it was addressed for delivery to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 by "Express Mail Post Office to Addressee" service.

Donald S. Prater Donald S. Prater
*Name (Print)* *Signature*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

| | | |
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| In re Application of: Brown et al. | ) | Examiner: John P. Fitzgerald |
| Application Number: 10/649,348 | ) | Group Art Unit: 2856 |
| Filed: August 27, 2003 | ) | Confirmation No.: 4171 |
| Docket No.: 03029 (3600-374-11) | ) | |

For: METHODS TO CONTROL AND/OR PREDICT RHEOLOGICAL PROPERTIES

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 CFR 1.97(c)**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

October 29, 2004

Sir:

The attention of the Patent and Trademark Office is hereby directed to the documents listed on the attached Form PTO-1449. Since this application has a filing date after June 30, 2003, no copies of U.S. Patents/Patent Application Publications are provided.

Attachment A is a description of the Development History that occurred which the Examiner may consider relevant.

This Supplemental Information Disclosure Statement is being submitted after expiration of the three-month period following filing of the above-captioned application, but before any Final Office Action or Notice of Allowance.

The above information is presented so that the Patent and Trademark Office can, in the first instance, determine any materiality thereof to the claimed invention. *See* 37 CFR 1.104(a) and 1.106(b) concerning the PTO duty to consider and use any such information. It is respectfully

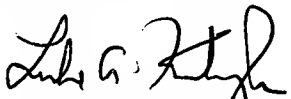
requested that the information be expressly considered during the prosecution of this application, and that the documents cited in the attached Form PTO-1449 be made of record therein and appear on the first page of any patent to issue therefrom.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in this application and applicant determines that the cited documents do not constitute "prior art" under United States law, applicant reserves the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

Please charge the fee of $180.00 to Deposit Account No. 03-0060. If there are any other fees due in connection with the filing of this response, please charge the fees to Deposit Account 03-0060.

Respectfully submitted,



Luke A. Kilyk
Reg. No. 33,251

Atty. Docket No.: 03029 (3600-374-11)
KILYK & BOWERSOX, P.L.L.C.
53 A East Lee Street
Warrenton, VA 20186
Tel.: (540) 428-1701
Fax: (540) 428-1720
Enclosures: PTO-1449, w/56 Documents

**ATTACHMENT A**
**Development History**

In the early 1990's, Cabot was a supplier of Carbon Black A to CUSTOMER for use in a particular product made by CUSTOMER. When CUSTOMER reformulated its product, Carbon Black A was no longer a suitable component for achieving a key performance attribute of the reformulated product.

In 2000, in an attempt to regain CUSTOMER's business, Cabot produced a new black, Carbon Black X, at Cabot's Plant A facilities. Carbon Black X has a different morphology* than that of Carbon Black A. The morphology of Carbon Black X made it an acceptable carbon black for use in CUSTOMER's reformulated product.

During 2001, CUSTOMER approved Carbon Black X from Plant A for use in its reformulated product. However, Carbon Black X was still inferior to the carbon black that had been previously adopted for use by CUSTOMER in its reformulated product ( hereinafter referred to as the "control carbon black ").

During 2001, CUSTOMER announced its intention to enter into a global contract with a carbon black supplier that would concern a number of carbon black products.

If Cabot were the selected supplier, it planned to shift its manufacturing of Carbon Black X to Plant B. In anticipation of such change, Cabot made a sample lot of Carbon Black X from carbon black made at Plant B and post-processed at Plant C to control the distribution of agglomerates**. CUSTOMER conducted a laboratory evaluation of this material in January 2002 and found it performed poorly in achieving the key performance attribute in its reformulated product. As a result, in February 2002, Cabot used an outside Pilot Facility to carry out the post-processing steps that had been carried out at Plant C, at a range of different conditions. CUSTOMER evaluated samples of these materials in their laboratory. These results showed that the Carbon Black X samples made under the various conditions tested at the Pilot Facility resulted in the key performance attribute varying from poor to good, depending on the post-processing conditions, and therefore, the agglomerate size distribution.

In the Fall of 2001, Cabot used interfacial potential measurements to compare Carbon Black X made at Plant A with the control carbon black, that had acceptable performance attributes in CUSTOMER's reformulated product. These tests involved measuring the wicking rate of various fluids in a column of the carbon black. These measurements suggested that the difference in the key performance attribute of Cabot's Carbon Black X and the control carbon black might be due at least in part to a difference in interfacial potential. However, further testing needed to be done to fully understand this affect.

Consequently, Cabot did two experiments at Plant A, which involved holding the morphology of Carbon Black X constant, but altering process conditions in order to change the performance attributes of Carbon Black X. Cabot altered process conditions that it thought might impact interfacial potential aspects of the blacks and thereby alter the performance of the black in the areas of interest to CUSTOMER.

- The first experiment, in December 2001, demonstrated that varying one particular process condition in a particular way was beneficial for achieving CUSTOMER's key performance attribute.
- The second experiment, in February 2002, demonstrated that varying certain other process conditions in particular ways was also beneficial for achieving CUSTOMER's key performance attribute.

Evaluation samples of the various blacks produced by Cabot in both experiments were provided to CUSTOMER for testing. The testing was carried out on a laboratory scale. CUSTOMER measured the key performance attribute of the various sample blacks and ranked the various samples in order of the performance results it measured.



* Morphology relates to the surface area and structure of carbon black aggregates. Aggregates are generally smaller than one micron.

** Agglomerates are made up of aggregates and are generally larger than one micron.

Thereafter, Cabot correlated the performance results obtained by CUSTOMER for the various samples with the operating conditions under which they were made, and the wicking rates that Cabot measured for the various sample blacks in different fluids. From the wicking rate data, Cabot calculated the difference between the work of cohesion and work of adhesion ($W_c$-$W_a$). Cabot's tests began to support a possible influence of interfacial potential. Further testing was done.

In March 2002, Cabot predicted the key performance attribute of Carbon Black X by measuring the yield point after mixing the black in a mixture of ethylene glycol and water. The method was developed into a QA test for CUSTOMER's key performance attribute and implemented as an experiment in Plant B, in August 2002.

Cabot and CUSTOMER entered into a global supply contract in December 2001 for a number of carbon black products (including Carbon Black X). As a result, Cabot had to install some new equipment (to perform the processing steps that have been carried out in the earlier experiments either at Plant C or the outside Pilot Facility) at Plant B as soon as possible.

In early August 2002, pursuant to the global supply agreement, CUSTOMER requested 20,000 pounds of Carbon Black X trial material from Plant B by way of a purchase order. CUSTOMER wanted to have a standing order in place to obtain Carbon Black X trial materials from Plant B when it was available. When the purchase order was received, the requested trial material was not available.

When the Plant B facility was finally completed in August 2002, a sample lot of at least 20,000 pounds of carbon Black X was made at Plant B for evaluation by CUSTOMER. However, a laboratory scale size sample of this material was first sent to CUSTOMER for laboratory testing in September 2002. Thereafter, 20,000 pounds of the Carbon Black X trial material from the same sample lot was shipped to CUSTOMER's plant in October 2002 under the outstanding purchase order for various evaluation trials.

The Carbon Black X that was shipped to CUSTOMER in September and October 2002 had been made at Plant B in August 2002 using the learnings from the two above-described earlier experiments at Plant A. The yield point QA test was used to predict that the key performance attribute of this evaluation material was at least comparable to Carbon Black X from Plant A.

CUSTOMER's laboratory and plant studies found that Carbon Black X evaluation material made at Plant B in August 2002 took too long to dry. Its performance was also marginal for another performance attribute important to CUSTOMER. Consequently, another run of Carbon Black X was made at Plant B in late September 2002-October 2002. Cabot made a number of process condition changes in an attempt to alter interfacial potential aspects of the black and the agglomerate size distribution, which Cabot believed would solve the problem. The resulting product was tested in CUSTOMER's plant in November 2002 was found superior to Carbon Black X from Plant A in terms of a number of CUSTOMER's performance considerations.

However, Carbon Black X made at Plant B in September 2002-October 2002 imparted other performance attributes that were not acceptable. To address these issues, further changes to the agglomerate size distribution were made that affected aspects of the black other than its morphology or interfacial potential attributes. After a series of plant trials at CUSTOMER, Carbon Black X from Plant B was commercially approved for use in formulations manufactured at one of CUSTOMER's facilities in June 2003.

All sampling, testing and developmental activities described above were carried out pursuant to a confidential disclosure agreement between Cabot Corporation and CUSTOMER.

The foregoing is based upon information that is currently available.

| FORM PTO-1449 (REV 7-80) | Atty. Docket No. 03029 (3600-374-11) | Application No. 10/649,348 |
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| INFORMATION DISCLOSURE STATEMENT | APPLICANT: BROWN et al. | |
| | Filing Date: August 27, 2003 | Group Art Unit: 2856 |



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| EXAMINER | DATE CONSIDERED |
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.